HOW DID THEY MANAGE the FLOATING CRISIS?

Example From Korea, Mexico and Brazil

Melike ALTINKEMER

March 12, 2001

SUMMARY

In this paper, experiences of Korea, Mexico and Brazil after abandoning their fixed exchange rate policies as a result of financial crisis are examined with special emphasis on their monetary policies during the crisis and their handling of banking sector problems. In all cases examined, it was the tight fiscal policy together with tight monetary policy with high interest rate, a credible way of handling the banking sector problems including closing, suspending and buying bad loans together with a considerably high international financial support that helped to bring inflation and devaluation expectations down in a relatively short amount of time. The conclusion of paper will offer some solutions for Turkey.

KOREA

The financial crisis of 1997 in Korea had a devastating impact on the economy, leading to a recession with GDP (running between 5-10% before the crisis) falling to negative 5.8% in 1998 and to increasing unemployment 6.8% in 1998 from 2% precrisis level. The capital account liberalization accelerated private sector borrowings (both direct borrowing by the corporate sector and bank borrowing to finance the investments of the corporate sector) which had reached to 33% of GDP and that was not sustainable given Korea's economic growth potential. The problem was high portion of short term foreign debt and term mismatch which signaled serious external liquidity problem. By 1996, the ratio of short term external liabilities to official reserves had risen to 280%. Sound fundamentals such as stable GDP growth, high savings rate, low inflation, balanced budget were disguising the structural vulnerability of high foreign exchange risk. .Despite its strong fundamentals, Korea's vulnerability to financial crisis stemmed from private sector's weak balance sheets. Financial liberalization and loose regulations on financial institutions leading them to engage in excessive risk taking and concentrating credits on chaebolds (big conglomerates) and the resulting bad loans had already deteriorated balance sheets. Then in 1996, first major blow to the weak balance sheets came with the terms of trade shock which occurred as a result of decline in the price of major exports. Collapse of Thai Baht in 1997 and the suspension of 42 finance companies in Thailand in August 1997, collapse of Asian stock market and the resulting decrease in net worth, increasing uncertainty, bankruptcies of chaebolds and the downgrading of Korea's sovereign rating in October all helped the attack on won which depreciated 47% between October and December of 1997.

1997 crisis in the form of speculative attack on won took place in the context of very low foreign reserves. After the initial response of intervention in foreign exchange markets and interest rates hikes to defend won, it was allowed to float on December 1997. Authorities adopted a comprehensive stabilization package with IMF. Monetary policy was tightened to contain inflationary pressures, to prevent speculation and capital outflows.

Faced with the financial crisis, in 1997 government realized that unless insolvent banks were suspended from trading or closed down the whole financial markets were going to suffer from it. Insolvencies due to huge withdrawals of deposits and difficulties in borrowing from the call market and the resulting liquidity shortage caused 14 out of 30 merchant banks and two securities and one investment trust company to be suspended from trading in December. In addition, the shareholders' equity of two nationwide commercial banks were written down to a large extent. Later in January by subscribing shares government recapitalized them.

In August 1998, 16 commercial banks and 4 security firms were banned. 2 investment and trust companies were suspended trading and their assets were transferred to other investment and trust companies. .Also out of 12 undercapitalized banks 5 were suspended trading and their business is transferred to 5 commercial banks under purchase and assumption. The remaining 7 were required to submit implementation plans to increase their capital adequacy ratios in line with Basle requirements

(Banks whose implementation are not approved will be forced to either mergers or transfer business or exit)

Faced with problem of growing lack of credibility of the banking system's soundness, Government decided to include various type of financial instruments under the guarantee scheme of Korean Deposit Insurance Corporation whose debentures were fully backed by government

The other important problem threatening the whole financial system was the non performing loans problem which was worsened by the economic recession. To solve this problem, government decided to swap the non performing loans with government guaranteed bonds of 64 trillion won. Cash raised by the issuance of these bonds was to be used to recapitalize the banks and to pay depositors of the failed banks back their money. The deposit guarantee reassured them and there were no massive flight of depositors triggered by closures. This made it possible for authorities to deal with the most urgent problems of insolvency and undercapitalization of banks and the weakness of supervisory set up. Despite all this, the banking sector problems did not result in major monetary disturbances. The funds stayed in the system and they were transferred from exiting institution to the one purchasing it. Relatively small amount of liquidity support was needed from the Bank of Korea which was able to sterilize them through sale of its monetary stabilization fund.

On the monetary policy side, Bank of Korea took some measures to improve the effectiveness of monetary policy instruments. They include, lowering of minimum reserve requirement ratios, a sharp reduction in discount window and the introduction of competitive bidding for open market operations. Since 1979, Bank of Korea had adopted M2 as the main intermediate target for its monetary policy because M2 had a stable relationship with price level and nominal income. However, after the financial liberalization, the stability between M2 and the other variables was disrupted and Bank of Korea has shifted to M3, the broadest monetary aggregate as its intermediate target from late 1997, since M3 reflected the portfolio shifts between the banks and non financial institutions resulting from the interest rate deregulation plan in July 1997 much better than any other intermediate target.(M3=M2+CDs+Money in trust+deposit at other financial institutions+financial debentures issued+commercial bills sold+repos+cover bills) Bank of Korea also uses annual and quarterly reserve money target ranges which are consistent with M3. For monthly programming bank uses reserve money rather than M3 because of the collection lag involved with M3.

As an operational target, Bank of Korea used bank reserves in its daily operations. Main reason for focusing on bank reserves and not on interest rates is that financial environment was not mature enough i.e especially the corporate sector was very sensitive to movements in interest rates and also because of lack of a short term interest rates which could reflect demand and supply conditions of the markets. Since, the interest rate deregulation which was phased out into long term, it took some time for interest rates to reflect demand and supply conditions. However, after the currency crisis of 1997, with the external financing difficulties of rolling over large short term debt, depreciation of won by %32 in just two months, exchange rate stability and its relation to short term interest rates started to be the main focus of the Bank and hence since 1998 Bank started to use, in addition to bank reserves, overnight call rate as its operational target (in agreement with IMF). Right after the adoption of interest rate as operational target, the Bank raised the overnight call rate to 25%, the legal maximum interest rate in December 1977, to stabilize the exchange rate but that did not help further depreciation of won. This time ceiling on interest rate was increased to 40% and call rate was raised to 30% and kept at that high level till it helped to stabilize won in February 1998 . However now Bank of Korea was facing a dilemma between achieving short term goal of attracting portfolio investment with high interest rates and long term goal of prevention of further deterioration of its export industries which required lower interest rates.

There was also the practical problem of targeting the interest rate consistent with inflation in the medium term because of the difficulty of assessing the effect of exchange rate movements on inflation due to increased exchange rate volatility following the crisis.

Bank used trial-error approach to find the interest rate appropriate for its purposes. It gradually lowered the rate within a very narrow range, closely watching the developments in foreign exchange market, foreign capital inflows and inflation. As a result of all the measures taken, the call rate which was 30% in December 1997 was gradually decreased down to 8% by the end of August 1998. Also won stabilized from its December 1997 level of 2,100 won to 1,300 won per US dollar in August 1988, with reserves increasing from $ 7 billion to $ 41 billion and inflation decreasing from monthly 2.5% in 1997 to 0.3% in 1998.

In short, the Bank focused more on financial market conditions such as short term rates and exchange rates than on bank reserves as it used to do before the crisis.

MEXICO

In late 1987, Mexico was facing 140% annual inflation. To solve this problem, government engaged in an aggressive stabilization program with wage freeze and administered prices. Exchange rate was fixed and became the main anchor of the program starting from February 1988. Between 1988 and 1994, exchange rates went through several adjustments. In 1989 a pre announced devaluation regime where nominal devaluations were set below inflation rate was followed. Then in 1991, they went on to a narrow exchange rate band with a sliding ceiling. Between 1992-93, NAFTA agreement was in the center stage boosting investor confidence. During which peso was fairly stable, remaining in the lower half of the band. In the first 18 months of the program, inflation fell to less than 20 percent but then the pace of disinflation became very slow. It should also be mentioned that between 1992-94 capital inflow to Mexico was 7 percent of GDP. There were also discussions regarding the appreciation of peso together with the growing current account deficit which was being financed by these inflows. To avoid the problem of rolling over a sizable amount of domestic debt at high interest rates and further rise in interest rates, Mexico had a crucial change in monetary policy by replacing maturing peso denominated cetes with tesebonos- short term dollar linked public debt instrument in April 1994, keeping the exchange rate band and the base money target intact. This act itself boosted confidence in the fixed exchange rate since it meant no devaluation to the public. By November 1994, tesebonos grew to be US$16 billion, while international reserves were US $ 12.9 billion, barely covering 40 percent of short term public debt or 10 percent of total short term liabilities of the banking sector. Domestic political tension and the decrease of international reserves caused further attack on peso to which the authorities reacted by lifting the exchange rate ceiling by 15 percent. Since this change was not supported by any other macroeconomic policy it wasn't credible and hence, resulted in capital flight and US $4 billion loss of reserves. In December 1994, since Central Bank was no longer able to defend the peso, Mexico abandoned the fixed exchange rate regime and allowed peso to float.

In the aftermath of 1994 devaluation, economic policy was faced with challenge of conducting macroeconomic adjustment in response to sharp reduction in capital inflows and to refinance its short term dollar denominated public debt of approximately US$ 30 billion dollars and to maintain the solvency of banking sector while protecting depositors.

In its search for a anchor to conduct its monetary policy, the Bank decided to contain the inflationary effects of devaluation and decided to follow tight monetary policy by setting quantitative targets for the growth of base money as intermediate target consistent with its inflation objective. Needless to say, tight monetary policy raised overnight interest rates from 16% in December 1994 to 86% in March 1995. Bank also decided to establish limits on the expansion of domestic credit but it did not always react to the deviation of monetary base from its observed path, especially when they are

considered non inflationary. However, it soon became obvious that reserve money (and control of net domestic credit) targeting alone could not decrease inflationary expectations, because banks did not hold any excess reserves due to zero reserve and liquidity requirement policy and also because in crisis times, velocity of money becomes very unstable making the relationship between inflation and reserve money unstable. So, in late March 1995, The Central Bank increased overnight funding rate to 100% by establishing interest rate floors in open market operations, hence used discretionary monetary policy in addition to the rule based one, to prevent the peso from depreciating further. However, more than 100% depreciation of the peso, leading to high and variable inflation and economic recession, made it unrealistic to use interest rates as operational target, since it would be impossible to find adequate levels given the very uncertain financial environment. So for daily operational target, The Bank of Mexico decided to use the average level of settlement balances on banks' accounts called "zero-average reserve requirement system". The system has 28 day maintenance periods during which the banks manage their current account balances at the Central Bank so that at the end of each maintenance period their daily average turns out to be zero. This system is designed to induce credit institutions to avoid on average overdrafts or positive balances on their current accounts and cause them to offset any excess they might have by lending to other banks or borrow from them any deficiency they might have. At the end of the maintenance period, The Bank charged an interest rate twice that of the 28 day CETES (zero coupon government securities) on all negative accumulated balances. This way banks with positive balances suffer an opportunity cost equal to those having to pay for negative balances and hence everybody has an incentive to have a zero balance. There are also limits established on each institutions' daily positions to prevent the fluctuations translating into upward pressure on interest rates in the last few days of maintenance periods; Limits on positive daily balances imply ceilings on negative accumulated balances the bank can offset based on the remaining number of days to the end of maintenance period The zero accumulated current account balance rule implies that The Bank will sterilize the monetary impact of net international assets and from the operations that the Treasury carries out in accounts with Central Bank. It should also be noted that Bank of Mexico does not have reserve and liquidity requirements which means has only open market operations as the main policy tool in conducting monetary policy

In addition to the tight monetary policy, fiscal policy was tightened leading to a primary surplus of 4.7% of GDP in 1995 from 2.1% in 1994. Also to induce the creditors to roll over their maturing loans to Mexico they negotiated and obtained a US $52 billion international support package mainly from IMF and the US government. In dealing with banking sector problems of fragility, moral hazard and systemic run on, regulation and supervision, authorities recognized the cost of banking sector restructuring a fiscal problem and decided to resort the Central Bank as little as possible, hence freed the monetary policy to pursue its goal of price stability. In line with these objectives, the Central Bank opened credit lines denominated in foreign currency at a penalty rate for commercial banks to fulfill their external obligations.

Following these measures, peso became stable, interest rates fell, international community resumed lending, GDP grew on average 5.6 percent between 1996-98 and inflation decreased from 51.7% in 1995 to 18.6% in 1998.

BRAZIL

Even though Brazil was affected by the Mexican crisis and to a smaller extent by the 1997 Asian crisis, real blow came with the Russian crisis of August 1998 and it resulted in $30 billion loss in foreign reserves trying to defend the *real*. Domestic problems such as elections delayed the foreign financial rescue package till December 1998, but they managed to get $41.5 billion by signing a 3 year stand-bye with IMF $9.2 billion of which was disbursed immediately, the rest was conditional on fiscal adjustment. However lack of progress in the fiscal arena, resistance to high interest rates, capital

outflows and strong demand for the correction of appreciation of *real* caused monetary policy to be ineffective in defending the currency and *real* was let to float on January 15 and by the end of February it depreciated by more than 35%. The new exchange rate regime necessitated a new monetary policy. However, that was quite difficult to do given the financial market conditions and unsettled expectations following the depreciation. To offset the capital flight caused by increase in inflation following such a substantial depreciation and to avoid further depreciation, nominal interest rates had to be raised. This issue raised considerable debate. Proponents of tight monetary policy insisted on high interest rate higher than devaluation expectations so as to lift the pressure on exchange rate. The problem was that high interest rates would increase debt service, increase the default chance and could signal further inflation.

At any event, the agreement with IMF on March 8, 1999 set two clear objectives and instruments to limit the inflationary impact of devaluation: first was raising interest rates and second, to prevent the ratio of debt to GDP from exploding by producing substantial primary surplus. The estimated cost of this policy on real sector was around 4% decline in GNP. The short term interest rates after the float was raised from 29% in January to 45% in March. By May 1999 however, the *real* had risen from 1 US$:2.21 in March, to 1US$:1.67, short term interest rate had fallen from 45 percent to 23 percent and inflation declined from annualized rate of 16% in March to 6 percent in April. What's more, instead of going into recession economy grew by 1 percent in the first quarter of 1999.

Among the reasons cited for such a rapid turnaround was first of all good luck (agricultural output grew by 19 percent due to good weather conditions) and low interest rates in US, but what restored the investor confidence was fiscal action and discipline (collapse of *real* forced congress to pass the pension legislation that was rejected in 1998 and measures to cut expenditures were introduced) and a sizable international financial help. Immediate results were achieved by the first quarter of 1999 with US $5.6 billion primary surplus.

The Central Bank continued its commitment of tight monetary policy to restrain inflation by high interest rates regardless of its consequences. Coupled with the serious fiscal and monetary measures, external endorsement of these measures restored confidence (In addition to US$ 41.5 billion in IMF credit The World Bank also agreed to give US$4.5 billion to support social spending and state level reforms) and by April short term capital rushed back attracted by very high real interest rates due to decline in inflation, which allowed the Central Bank to reduce nominal interest rates six times in seven weeks without giving the impression that it was giving up tight monetary policy. Also the banking sector had a role in recovery, since many banks were expecting the devaluation, they had hedged themselves by futures contracts and by holding dollar linked government bonds. Hence, the risk of banking sector collapse did not threaten fiscal balance.

Despite the program's success, reforms that were avoided for more than a decade was not fully addressed. Operational deficit is quite large due to interest obligations. To service the external liabilities accumulated during five years export performance as well as external finance is a must. i.e program is vulnerable to external shocks. Using the opportunity of economic recovery, Brazil may convert the debt denominated in foreign currency to locally denominated debt and may escape some of the vulnerabilities to external shocks as was done by Mexico.

CONCLUSION

The common factors in all three countries examined were: fixing of the exchange rate to break inflationary inertia, excessive credit growth before the crisis, excessive short term foreign borrowing induced by fixed exchange rate guarantee, weak banking system and loose supervision.

In addition, in Korea incomplete financial liberalization seemed to play a role in accumulating large stock of short term debt, since liberalization allowed only short term borrowing by financial institutions, maintaining quantity restrictions on long term borrowing.

Among the three countries examined, Korea was the only one with sound macroeconomic fundamentals, despite structural weaknesses such as weak corporate governance which made them susceptible to contagion..

Also in Korea, the attack against won was not a usual currency attack but was driven by foreign creditors' run on Korean financial institutions and chaebolds to collect their loans and by foreign investors to exit from the stock market. It was the contagion effect, the herd behavior of the uninformed investors who are following the informed ones with a lag that caused the crisis. I personally to think the same thing happened in Turkey in November. Had it not been for the East Asian and Korean crisis or had that crisis not had the dimension it had, the Turkish crisis wouldn't have taken place. This is a counterfactual statement, but I believe that it is the asymmetric information and the uninformed investors who are acting in panic without the knowledge of fundamentals of these economies and putting them all in the same basket that causes the so called currency attack and not the attack by domestic people. If you would recall, when the Russian crisis took place, many investors flew from Turkey and there was no similarity between the economies of two countries. Maybe this is the price of globalization.

Anyway, an important question to be resolved is what is the alternative to pegging the exchange rate if a nominal anchor is needed for inflation control. With the flexible exchange rates there is either the monetary targeting or inflation targeting left. The experiences of countries that have undergone banking crisis show that crisis have significant implications for the short run stability of money, the money multipliers and the transmission mechanisms. The truth is that you can hardly target anything until the financial markets calm down, banking sector's fragility and the bad loan problems is resolved in a credible way, preferably by leaving the Central Bank out of it and by raising the money required to buy back the bad loans and to recapitalize the banks by an independent body.

Is inflation targeting a viable option?

The first requirement for inflation targeting is that Central Banks should have considerable independence. This implies that there should be no indication of fiscal dominance in conducting monetary policy. i.e. the Central Bank should not subordinate its monetary policy to inefficiencies of the fiscal policy. Public sector borrowing from The Central Bank should be almost nonexistent, financial markets should be deep enough for Treasury to borrow and roll over its debt and its inability to borrow from the markets should not constrain monetary policy.

The second requirement is that authorities should refrain from targeting the level or the path of any other variable such as exchange rate since, such coexistence would create problems and most likely will result in credibility loss.

An important point to consider is that inflation targeting is introduced when inflation is already very low –less than 10 percent. Hence Brazil or Korea can use inflation targeting but it is hardly the case for Turkey given inflation expectations of at least 50%. It should also be kept in mind that , the disinflation program of 2000 was the only serious program Turkey had, to control inflation and there is no country who succeeded with just one program in reducing inflation. The experiences of Mexico, Brazil, Israel etc. indicate that it is a painful and bumpy road and it may take up to 10 years to reduce inflation and many stabilization and disinflation programs. So for the time being, till the banking sector's restructuring problems and the public bank's duty loss problems are resolved, preferably with international rescue packages as was in the case of Korea and Mexico, together with serious credible

steps taken for fiscal discipline, (it was this combination which reduced inflation expectations in all cases), The Central Bank will have to continue its tight monetary policy and continue reserve money targeting (reserve money is cointegrated with inflation in the long run) as was the case before the implementation of disinflation program. In this respect, the monetary policy reaction function estimated for The Central Bank (See Altınkemer 1998), where net domestic assets change in response to increases or decreases in capital inflows, to rate of depreciation of real exchange rate as well as to deviation of domestic interest rates from foreign rates, will still be valid in stabilizing the financial markets first, then to keep the reserve money growth within desired levels .In the aftermath of the financial crisis, injecting liquidity to the distressed banks in the face of declining net foreign assets, would increase net domestic assets which would require sterilization and that would mean additional quasi fiscal cost as was calculated in that paper. However, given the uncertainty we are facing, till bank restructuring and sound macro policies are put into effect, at the moment, it seems that raising the interest rates above devaluation expectations, intervention in the foreign exchange market when necessary and sterilization is the only reasonable course of action to follow.

REFERENCES:

Altınkemer M;(1998), “Capital Inflows and the Central Bank’s Policy Response”, in Macroeconomic Analysis of Turkey: Essays on Current Issues, edited by Murat Üçer, The Central Bank Research Department as well as Central Bank Discussion Paper in 2001.

Balino T. and A. Ubide(1999),” The Korean Financial Crisis of 1997- A Strategy for Financial Sector Reform”, IMF Working Paper 28, March 1999, International Monetary Fund; Washington D.C

Cardoso E. and A. Helwege (1999), “Currency Crisis in the 1990’s: The Case of Brazil”, NBER Conference on “Brazil in 1997-1999 Financial Turmoil”, April 14-15,2000, Cambridge:MA

Carstens A. and A.M. Werner (1999), “Mexico’s Monetary Policy Framework Under a Floating Exchange Rate Regime”, Banco de Mexico

Edwards S. and M. Savastano (1998), “The Morning After: The Mexican Peso in the Aftermath of the Currency Crisis”, NBER, Working Paper No 6516; Cambridge, MA

Masson P. et al (1998), “Can Inflation Targeting be a Framework for Monetary Policy in Developing Countries”, Finance and Development, March 1998

Mishkin F. and J. Hahm (2000), “Causes of The Korean Financial Crisis: Lessons For Policy”, NBER Working Paper No 7483; Cambridge., MA.

“Monetary Policy Operating Procedures in Emerging Markets Economies”, BIS Policy Papers No 5, March 1999, Basle, Switzerland.